REMARKS

In the non-final Office Action, the Examiner rejects claims 79-86, 94-103, 111, 112, and 116-119 under 35 U.S.C. § 103(a) as unpatentable over HOLT et al. (U.S. Patent No. 6,701,305) in view of BOWMAN et al. (U.S. Patent No. 6,006,225); and rejects claims 87-93, 104-110, 113-115, and 120-122 under 35 U.S.C. § 103(a) as unpatentable over HOLT et al. in view of BOWMAN et al. and LIDDY et al. (U.S. Patent No. 6,026,388). Applicants respectfully traverse the rejections.

By way of the present amendment, Applicants amend claim 125 to improve form and add new claims 123-126. No new matter has been added by way of the present amendment. Claims 79-126 are pending.

Rejection under 35 U.S.C. § 103 based on HOLT et al. and BOWMAN et al.

Claims 79-86, 94-103, 111, 112, and 116-119 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over HOLT et al. in view of BOWMAN et al. Applicants respectfully traverse this rejection.

Independent claim 79 recites a method that is performed by a device. HOLT et al. and BOWMAN et al., whether taken alone or in any reasonable combination, do not disclose or suggest one or more of the features recited in claim 79.

For example, HOLT et al. and BOWMAN et al. do not disclose or suggest formulating, by a processor, a search query refinement suggestion based on at least one of the search result documents and at least one search query-search document association in a database relating to the at least one search result document, where each search query-search document association represents a one-to-one pairing of an issued search query and a search document, as recited in claim 79. The Examiner relies on column 6, lines

11-52 HOLT et al. for disclosing storing, in a memory of the one or more server devices, search query-search document associations in a database, each search query-search document association representing a one-to-one pairing of an issued search query and a search document and relies on column 6, lines 3-32 of BOWMAN et al. as allegedly disclosing formulating, by one or more processors of the one or more server devices, a search query refinement suggestion (Office Action, pg. 3). Applicants respectfully disagree with the Examiner's interpretation of HOLT et al. and BOWMAN et al.

To begin, Applicants object to the Examiner's piecemeal examination of the above feature of claim 79. That is, instead of addressing the feature of formulating, by a processor, a search query refinement suggestion based on at least one of the search result documents and at least one search query-search document association in a database relating to the at least one search result document, where each search query-search document association represents a one-to-one pairing of an issued search query and a search document, the Examiner breaks the feature down into illogical parts by pointing to unrelated sections of two different references for allegedly disclosing different parts of the feature. Such attempts at reconstructing Applicants' claims are clearly impermissible.

M.P.E.P. § 2106 II(C), which covers this situation, recites (emphasis added):

> Finally, when evaluating the scope of a claim, every limitation in the claim must be considered. USPTO personnel may not dissect a claimed invention into discrete elements and then evaluate the elements in isolation. Instead, the claim as a whole must be considered. See, e.g., *Diamond v. Diehr*, 450 U.S. 175, 188-89, 209 USPQ 1, 9 (1981) ("In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered as a whole. It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis. This is particularly true in a process claim because a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made.").

Here, the Examiner has dissected claim 79 into discrete elements and then evaluated the elements in isolation. As such, Applicants respectfully submit that the Examiner has not considered the claim as a whole. As is made apparent from the above-cited section of the M.P.E.P., such attempts at reconstructing Applicants' claims are clearly impermissible.

Nevertheless, at column 6, lines 11-52, HOLT et al. discloses:

> According to one aspect of the present invention, a method, apparatus and computer program product are provided to retrieve information from a text data collection that comprises a plurality of documents with each document consisting of a number of terms. The text data collection is represented by a term-by-document matrix having a plurality of entries with each entry representing the frequency of occurrence of a term in a respective document. According to this aspect of the present invention, an orthogonal basis for a lower dimensional subspace is generally obtained from the term-by-document matrix as a part of document indexing. A query is received that typically identifies at least one term. A representation of at least a portion of the term-by-document matrix is then projected into the lower dimensional subspace to create at least those portions of the subspace representation A_k relating to the term(s) identified by the query. At least those portions of the subspace representation A_k relating to the term(s) identified by the query are then weighted following the projection into the lower dimensional subspace. The plurality of documents are then scored with respect to the query based at least partially upon the weighted portion of the subspace representation A_k. Documents, such as the most relevant documents, can then be identified based upon ranking the scores of the documents with respect to the query.
>
> The method, apparatus and computer program product of this aspect of the present invention also permit queries to be treated as either a pseudo-document or as a set of terms, with the subsequent processing and scoring of the query differing depending upon its treatment. As such, a determination is initially made to treat the query as either a pseudo-document or a set of terms depending at least partially upon the number of terms included within the query. If the query is to be treated as a set of terms, the query is processed and scored as described above. Alternatively, if the query is to be treated as a pseudo-document, a representation of at least a portion of the term-by-document matrix and a query vector representative of the query are both projected into the lower dimensional space and the corresponding projections are compared with the scoring of the plurality of documents being based at least partially upon this comparison.

This section of HOLT et al. discloses a text data collection that is represented by a term-by-document matrix having a plurality of entries with each entry representing the frequency of occurrence of a term in a document of a plurality of documents in a text data

collection. This section of HOLT et al. further discloses projecting a portion of the term-by-document matrix into a lower dimensional subspace to create at least the portions of the subspace representation A_k relating to terms identified by a query. HOLT et al. does not disclose or suggest that the document is a search document. Rather, HOLT et al. merely discloses that the document is in a text data collection. Furthermore, even if the term-by-document matrix of HOLT et al. can reasonably be construed at corresponding to the search query-search document association of claim 79 (a point with which Applicants do not agree for the reasons given above), HOLT et al. does not disclose or suggest formulating a search query refinement suggestion based on the term-by-document matrix, as would be required by HOLT et al. based on the Examiner's interpretation of claim 79. Therefore, HOLT et al. does not disclose or suggest formulating, by a processor, a search query refinement suggestion based on at least one of the search result documents and at least one search query-search document association in a database relating to the at least one search result document, where each search query-search document association represents a one-to-one pairing of an issued search query and a search document, as recited in claim 79.

At column 6, lines 3-32, BOWMAN et al. discloses:

> For multiple-term queries, the query server 132 effectively logically ANDs the query terms together to perform the search. For example, if the user enters the terms "JAVA" and "PROGRAMMING" into the title field 220, the query server 132 will search for and return a list of all items that have both of these terms within the title. Thus, if any query term does not produce a match (referred to herein as a "non-matching term"), the query will produce a NULL query result. Presenting a NULL query result to the user can cause significant user frustration. To reduce this problem, in this event, the user may be presented with a list of items that are deemed to be "close matches." Although the search engine described herein logically ANDs the query terms together, it will be recognized that the invention can be applied to search engines that use other methods for processing queries.

> In accordance with the invention, the search engine uses the query term correlation data stored in the correlation table 137 to select the related terms that best match the user's query. The search engine then presents the related terms to the user, allowing the user to refine the search and enhance discovery of relevant information. The query term correlation data indicates relationships between query terms, and is used to effectively predict query terms that are likely to be helpful to the search refinement process. In accordance with another aspect of the invention, the correlation table 137 preferably contains or reflects historical information about the frequencies with which specific query terms have appeared together within the same query.

This section of BOWMAN et al. discloses using query term correlation data stored in a correlation table to select related terms that best match a user's query and presenting the related terms to the user, allowing the user to refine the search. This section of BOWMAN et al. discloses formulating a search query refinement suggestion based on terms close to terms entered by a user. This section of BOWMAN et al. has nothing to do with a search query-search document association. Therefore, this section of BOWMAN et al. does not disclose or suggest formulating, by a processor, a search query refinement suggestion based on at least one of the search result documents and at least one search query-search document association in a database relating to the at least one search result document, where each search query-search document association represents a one-to-one pairing of an issued search query and a search document, as recited in claim 79.

In addition, even if, for the sake of argument, the combination could be fairly construed to disclose or suggest each of these features of claim 79, Applicants assert that the alleged reason for combining these references does not meet the requirements of 35 U.S.C. § 103.

For example, on page 3 of the Office Action, the Examiner alleges that "[i]t would have been obvious…to utilize the teachings of Bowman in the system of Holt in

view of improving the search query refinement system." Applicants submit that the Examiner's reason is a conclusory statement and is impermissibly gleaned from Applicants' own disclosure. Such reasons are insufficient for establishing a *prima facie* case of obviousness.

For at least the foregoing reasons, Applicants submit that claim 79 is patentable over HOLT et al. and BOWMAN et al., whether taken alone or in any reasonable combination.

Claims 80-86 depend from claim 79. Therefore, these claims are patentable over HOLT et al. and BOWMAN et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 79.

Independent claims 94-96 and 111 recite features similar to features recited above with respect to claim 79. Therefore, claims 94-96 and 111 are patentable over HOLT et al. and BOWMAN et al., whether taken alone or in any reasonable combination, for at least reasons similar to the reasons given above with respect to claim 79.

Claims 118 and 119 depend from claim 95. Therefore, these claims are patentable over HOLT et al. and BOWMAN et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 95.

Claims 97-103 depend from claim 96. Therefore, these claims are patentable over HOLT et al. and BOWMAN et al, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 96.

Independent claim 112 recites a method that is performed by one or more server devices. HOLT et al. and BOWMAN et al, whether taken alone or in any reasonable combination, do not disclose or suggest one or more of the features recited in claim 112.

For example, HOLT et al. and BOWMAN et al. do not disclose or suggest formulating, by one or more processors of the one or more server devices, a refinement suggestion for a received search query using a created query source reference, where creating the query source reference includes identifying associations between issued search queries and retrieved search documents in a one-to-one relation, and assigning a weight to each of the associations, as recited in claim 112. The Examiner appears to rely on column 6, lines 11-52 and column 14, lines 16-53 of HOLT et al. for allegedly disclosing this feature of claim 112 (Office Action, pp. 3-4). Applicants respectfully disagree with the Examiner's interpretation of HOLT et al.

As noted above, at column 6, lines 11-52, HOLT et al. discloses a text data collection that is represented by a term-by-document matrix having a plurality of entries with each entry representing the frequency of occurrence of a term in a document of a plurality of documents in a text data collection. This section of HOLT et al. further discloses projecting a portion of the term-by document matrix into a lower dimensional subspace to create at least the portions of the subspace representation A_k relating to terms identified by a query. HOLT et al. does not disclose or suggest that the document is a retrieved search document. Rather, HOLT et al. merely discloses that the document is in a text data collection. Moreover, this section of HOLT et al. does not relate to formulating a refinement suggestion for a received search query. Therefore, this section of HOLT et al. does not disclose or suggest formulating, by one or more processors of the one or more server devices, a refinement suggestion for a received search query using a created query source reference, where creating the query source reference includes identifying associations between issued search queries and retrieved search documents in

a one-to-one relation, and assigning a weight to each of the associations, as recited in claim 112.

At column 14, lines 16-53, HOLT et al. discloses determining relative weights of the rows in the rows of the subspace representation A_k relating to terms identified by a query. As noted above, the subspace representation A_k is based on a portion of a term-by-document matrix having a plurality of entries with each entry representing the frequency of occurrence of a term in a document of a plurality of documents in a text data collection. HOLT et al. does not disclose or suggest that the document is a retrieved search document. Rather, HOLT et al. merely discloses that the document is in a text data collection. Moreover, this section of HOLT et al. does not relate to formulating a refinement suggestion for a received search query. Therefore, this section of HOLT et al. does not disclose or suggest formulating, by one or more processors of the one or more server devices, a refinement suggestion for a received search query using a created query source reference, where creating the query source reference includes identifying associations between issued search queries and retrieved search documents in a one-to-one relation, and assigning a weight to each of the associations, as recited in claim 112.

The disclosure of BOWMAN et al. does not remedy the deficiencies in the disclosure of HOLT et al. set forth above.

For at least the foregoing reasons, Applicants submit that claim 112 is patentable over HOLT et al. and BOWMAN et al., whether taken alone or in any reasonable combination.

Independent claims 116 and 117 recite features similar to features recited above with respect to claim 112. Therefore, claims 116 and 117 are patentable over HOLT et

al. and BOWMAN et al., whether taken alone or in any reasonable combination, for at least reasons similar to the reasons given above with respect to claim 112.

Rejection under 35 U.S.C. § 103 based on HOLT et al., BOWMAN et al., and LIDDY et al.

Claims 87-93, 104-110, 113-115, and 120-122 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over HOLT et al. in view of BOWMAN et al. and LIDDY et al. Applicants respectfully traverse this rejection.

Claims 87-93 depend from claim 79; claims 104-110 depend from claim 96; claims 113-115 depend from claim 112; claims 120 and 121 depend from claim 116; and claim 122 depends from claim 117. Without acquiescing in the Examiner's rejection of claims 87-93, 104-110, 113-115, and 120-122, Applicants submit that the disclosure of LIDDY et al. does not remedy the deficiencies in the disclosures of HOLT et al. and BOWMAN et al. set forth above with respect to claims 79, 96, 112, 116, and 117. Therefore, claims 87-93, 104-110, 113-115, and 120-122 are patentable over HOLT et al., BOWMAN et al., and LIDDY et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claims 79, 96, 112, 116, and 117.

New Claims

New claims 123 and 124 depend from claim 94 and new claims 125 and 126 depend from claim 111. Therefore, these claims are patentable over the art of record for at least the reasons given above with respect to claims 94 and 111.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of this application, and the timely allowance of the pending claims.

As Applicants' remarks with respect to the Examiner's rejections overcome the rejections, Applicants' silence as to certain assertions by the Examiner in the Office Action or certain requirements that may be applicable to such assertions (e.g., whether a reference constitutes prior art, reasons for modifying a reference and/or combining references, assertions as to dependent claims, etc.) is not a concession by Applicants that such assertions are accurate or that such requirements have been met, and Applicants reserve the right to dispute these assertions/requirements in the future.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

HARRITY & HARRITY, LLP

By: /Meagan S. Walling Reg. No. 60,112/
Meagan S. Walling
Registration No. 60,112

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11350 Random Hills Road
Suite 600
Fairfax, Virginia 22030
(571) 432-0800

Customer Number: 44989